MYCOTAXON

Volume 108, pp. 231–234 *April–June 2009*

A new species of *Pertusaria* (*Pertusariaceae*) from China

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Abstract –– *Pertusaria parapycnothelia* is described as new to science. The species is characterized by asci with 3 ascospores and the presence of 2'-*O*-methylperlatolic acid.

Keywords –– lichen, taxonomy, Yunnan

Introduction

Yunnan province is located in the southwest of China, east of the great Himalaya, between 21° 8′ 22"–29° 15′ 8" N and 97° 31′ 39"–106° 11′ 49" E. The terrain has an average altitude of ca. 2000m with the highest peak of Meili Mountain over 6700m in the northwest and lowest at Hekou about 76m in the south. This area is well known for a very diverse biota, and a very rich lichen flora is similarly expected, but many genera and places still remain incompletely investigated (Harada et al. 2004).

Since the publication of Zhao et al. in 2004 (Zhao et al. 2004), two new species of the lichen genus *Pertusaria* have been reported from China (Ren et al. 2008). Further study of the genus from Yunnan has revealed an additional species, which is here described as new to science.

Material and methods

The type specimen was collected in Yunnan province, southwestern China, and is preserved in SDNU (the Lichen Section of Botanical Herbarium, Shandong Normal University).

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A dissecting microscope (Motic K-400L) and a research microscope (JNOEC XS-213) were used for the morphological and anatomical studies. Lichen substances were detected by thin-layer chromatography (TLC) (Elix & Ernst-Russell 1993).

Taxonomic description

Pertusaria parapycnothelia Q. Ren & Z.T. Zhao, **sp. nov.** FIGURES 1–4
MycoBank MB 512990

Similis Pertusaria pycnothelia *sed ascis trisporis et 4,5-dichlorolichexanthone deficiens differt.*

Typus: CHINA. *Yunnan provincia, Lijiang, Xiangshan, alt. 2400m, ad corticem arborum, J.C. Wei 2738. (holotypus in HMAS-L).*

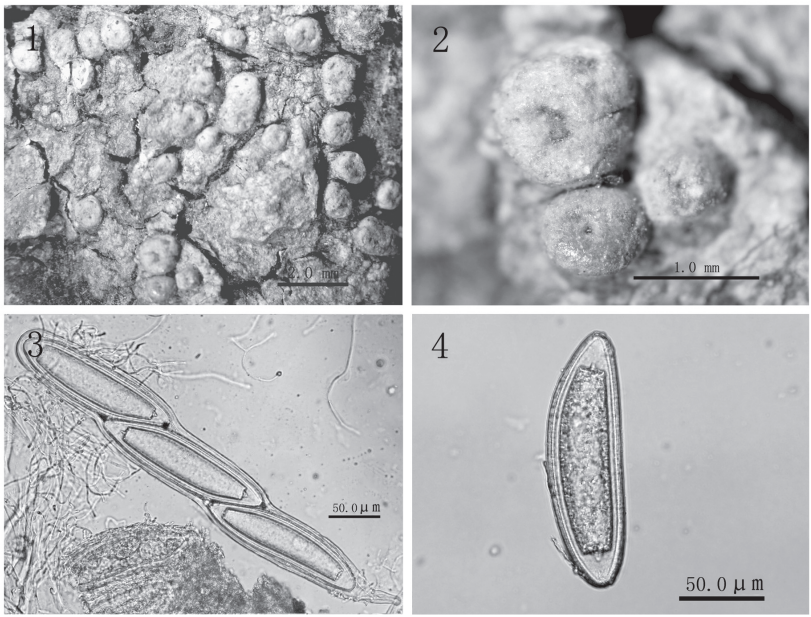
Etymology: from the Greek *para*, near, a reference to the similarity of the new species to *Pertusaria pycnothelia*.

Thallus crustose, thin, pale fawn, surface smooth; lacking soredia and isidia; corticolous; apothecia verruciform, scattered, sometimes confluent, concolorous with the thallus, hemispherical to flattened hemispherical, 0.5–1.2 mm diam. sessile, constricted at the base; ostioles conspicuous, black, punctiform, in a translucent, pale brown zone, 0.3–0.5 mm diam., 1–5 per verruca; ascospores (2–)3 per ascus, ellipsoid to subfusiform, (129–)140–168 µm long, 35–40(–54) µm wide, double-walled, smooth, 7–11 µm thick, inner wall distinctly trimmed, the end wall 17–23 µm thick; pycnidia not seen.

Chemistry: K–, C–, KC–, Pd–, UV–; 2′-*O*-methylperlatolic acid (TLC).

Distribution and substrate —At present, *Pertusaria parapycnothelia* is known only from the type locality where it occurs on *Quercus*.

Comments — *Pertusaria parapycnothelia* is characterised by asci with 3 smooth ascospores and the presence of 2′-*O*-methylperlatolic acid. The new species resembles *P. pycnothelia* Nyl. but differs from that species by the number of ascospores per ascus and ostioles per verruca. *P. pycnothelia* has 2-spored asci and verrucae with only 1 ostiole (Archer 1997), whereas the new species has asci with 3 (rarely 2) ascospores and verrucae with 1–5 ostioles. The new species is chemically identical to *P. buburana* Elix & A.W. Archer and *P. uttaraditensis* Jariangpr., but both of these species are sterile (Elix et al. 1997, Jariangprasert et al. 2005). The new species somewhat resembles the chemically identical saxicolous species *P. spegazzinii* Müll. Arg. (Müller 1889) from the southern hemisphere (Tierra del Fuego and the Falkland Islands), but that species has four [and larger (145–185 × 50–65 µm)] ascospores per ascus and larger, more conspicuous black ostioles.



Figures 1–4. *Pertusaria parapycnothelia* (J.C. Wei 2738). 1. Morphology (bar = 2 mm); 2. Apothecia (bar = 1 mm). 3. Ascus (bar = 50 μm); 2. Ascospore (bar = 50 μm).

Acknowledgements

The project was financially supported by the National Natural Science Foundations (No. 30870012 and No. 30870158), Yunnan Provincial National Science Foundation (No. 2006C0052M) and Shandong Provincial Natural Science Foundation (No. Y2007D21) of China. The authors thank Dr. Alan W. Archer and Dr. André Aptroot for expert presubmission review.

Literature cited

Archer AW. 1997. The lichen genus *Pertusaria* in Australia. Biblioth. Lichenol. 69: 1–249.

Elix JA, Ernst-Russell KD. 1993. A catalogue of standardised thin layer chromatographic data and biosynthetic relationships for lichen substance, 2nd Edition. 163 pp. Australian National University, Canberra.

Elix JA, Aptroot A, Archer AW. 1997. The lichen genus *Pertusaria* (lichenized *Ascomycotina*) in Papua New Guinea and Australia: twelve new species and thirteen new reports. Mycotaxon 64: 17–35.

Harada H, Wang LS. 2004. Diversity of lichens in Yunnan. Lichenology 2: 173.

Jariangprasert S, Anusarnsunthorn V. 2005. Additional new taxa in the lichen genus *Pertusaria* (lichenized *Ascomycota*) from Thailand. Mycotaxon 91: 279–292.

Müller J. 1889. Lichenes Spegazziniani in Staten Island, Fuegia e in regione Freti Magellanici lecti. Nuovo Giorn. Bot. Ital. 21: 35–54).

Ren Q, Sun ZS, Zhao ZT. 2008. Two new species of *Pertusaria* (*Pertusariaceae*) from China. Mycotaxon 106: 441–444.

Zhao ZT, Ren Q, Aptroot A. 2004. An annotated key to the lichen genus *Pertusaria* in China. Bryologist 107: 531–541.